

WISSENSCHAFTLICHE KURZMITTEILUNG

Gray's beaked whale *Mesoplodon grayi* in the South East Pacific

By J. C. REYES

Centro Peruano de Estudios Cetológicos, Lima, Peru

Receipt of Ms. 19. 6. 1989

A beaked whale stranded still alive at Bahía de Paracas ($13^{\circ}49'S$), Peru, on 23 March 1988. Personnel of the Reserva Nacional de Paracas took photographs of the animal just after death and reported the event to the author. Unfortunately when arriving at the location three days later, the whale was already in decomposition with the genital area damaged by sea birds.

The cetacean, a 467 cm female was identified as a Gray's beaked whale *Mesoplodon grayi* von Haast, 1876 by means of external characters and confirmed afterwards by examination of the cranial features as described by SIELFELD (1979). The complete skeleton, stomach contents, the right eye and the right ovary were collected and placed in the author's private cetacean collection (No. JCR-1342). The state of the carcass made still possible some external measurements (in mm, after NORRIS 1961): tip of snout to angle of mouth 47.0, tip of snout to center of eye 69.0, tip of snout to blowhole 67.0, tip of snout to external ear 77.5, tip of snout to tip of dorsal fin 321.0, tip of snout to umbilicus 218.0, tip of snout to anus 355.0, height of dorsal fin 22.0, anterior length of flipper 15.0, posterior length of flipper 34.5, maximum width of flipper 15.0, fluke width 106.0, girth at axillae 224.0. The beak was long and narrow, the throat grooves well developed. The dorsal fin was placed on the posterior third of the back. The flippers were rather pointed. The rear margin of the flukes showed a convexity on its center, lacking a central notch. From the photographs of the freshly dead whale some notes on the coloration can be given. The back and sides were brownish gray, being deeper on the flippers, flukes and around the eyes. The lower flanks had a mottled appearance due to the presence of gray patches. The gray belly shows whitish areas around the umbilicus and genital area, while the beak was pure white. Scars were not evident.

Selected skull measurements (in mm, after Ross 1984) are: Condylobasal length 883, length of rostrum 608, width of rostrum 174, breadth of skull across postorbital processes of squamosals 298, zygomatic width 293, greatest span of premaxillary crest 118, greatest width of premaxillae anterior to superior nares 116, greatest length of temporal fossa 103, greatest width of temporal fossa 61, greatest condylar length of mandibular ramus 767, greatest length of mandibular symphysis 305, greatest height of mandible at coronoid process 110, greatest length of right tooth 42, greatest antero-posterior width of right tooth 57, greatest breadth of right tooth 6. The pair of mandibular teeth were unerupted in the fresh head, but in the prepared skull they were observed being triangular in shape, emerging vertical 11 mm above the alveoli and placed 47 mm behind the posterior end of the mandibular symphysis. A row of 18 small teeth was present on each side of the upper jaw, a constant character of *M. grayi* (VON HAAST 1876; BOSCHMA 1950; ROBSON 1975; SIELFELD 1979). Most of these maxillary teeth were worn, revealing that they were functional. The mesorostral canal was filled by the vomer in 25 % of its length. Proximally the vomer reached the level of the premaxillaries, decreasing towards the distal end. The

pulp cavity of the teeth was completely occluded and the vertebral epiphyses fused to the centra. Both conditions indicate that the whale had reached physical maturity. The vertebral formula was C7, T10, L12, Ca19 = 48. Seven of the 10 pairs of ribs had capitular and tubercular attachments.

The right ovary weighed 10 g and did not bear any ovarian corpora; the left ovary was lost. The left uterine horn was dilated and its endometrium strongly vascularized, carrying a foetus of an estimated length of 50 cm. This foetus was already decomposed and only some bones, including the lower jaw with the corresponding tooth, were collected (JCR-1343). The stomach was empty except for the presence of four very digested squid beaks. No ectoparasites were observed. A cyst of the cestode *Phyllobothrium delphini* was found in the blubber around the anus.

Gray's beaked whale is considered to have a circumpolar distribution in the southern hemisphere between 30°S and 45°S (ROSS 1984). This range includes the western south Pacific, western south Atlantic and the Indian ocean (GASKIN 1968; LEATHERWOOD and REEVES 1983; LICHTER 1986). The species has also been recorded as far south as Patagonia and Tierra del Fuego (GOODALL 1978; SIELFELD 1979, 1980; DELHON et al. 1987). For the South East Pacific there are no consistent records. MANN (1957) cited the species for Chilean waters but he did not indicate either locality or specimen, although he probably referred to the account of BINI (1951) who reported a *Mesoplodon* sp. caught by fishermen off Iquique (20°10'S). The tentative identification of this specimen as *M. grayi* by HERSHKOVITZ (1966) is unreliable, since all existing evidence are photographs of a young female. Females and juveniles of *Mesoplodon* are difficult to identify to species by external characters only. Another beaked whale stranded at Paracas in 1955 is probably a record of Andrew's beaked whale, *M. bowdoini*. The extensive scarring observed in the existing photographs placed this specimen in the complex *stejnegeri* - *carlhubbsi* - *bowdoini*, featuring relatively short beaks and massive teeth, characters which have been related to social behavior (HEYNING 1984). Two sightings of an unidentified species of *Mesoplodon* off the northern Peruvian coast were reported by PITMAN et al. (1987). These authors described the beak of the whales sighted as "moderately long, appearing similar in size to that of *M. densirostris*". Posteriorly PITMAN (pers. communication) concluded that the whales he observed were not Gray's beaked whales.

From the foregoing review it is evident that the Peruvian specimen reported here is the first confirmed record of *Mesoplodon grayi* from the South East Pacific. The stranding location, Bahía de Paracas (13°49'S) is the northernmost known for the species in the southern hemisphere.

Acknowledgements

JULIO ARENAS and CARLOS OBANDO (Reserva Nacional de Paracas) reported the stranding, provided the photographs and helped in many ways during the collection of the present specimen. ROBERT L. PITMAN supplied information on his observations of beaked whales in the eastern tropical Pacific. JAMES G. MEAD and KOEN VAN WAEREBEEK made valuable suggestions on the manuscript. Moreover, J. G. MEAD provided photographs of the beaked whale stranded in 1955.

Literature

- BINI, G. (1951): Cattura di un rarissimo cetaceo al largo di Iquique (Cile). Boll. Pesc. Pisc. Idrobiol. 6, 3-10.
- BOSCHMA, H. (1950). Maxillary teeth in the specimens of *Hyperoodon rostratus* (Müller) and *Mesoplodon grayi* von Haast stranded on the Dutch coasts. Proc. Koninklijke Neder. Akad. Wetens. 53, 775-786.
- DELHON, G. A.; CRESPO, E. A.; PAGNONI, G. (1987): Stranding of a specimen of Gray's beaked whale at Puerto Piramides (Chubut, Argentina) and its gonadal appraisal. Sci. Rep. Whales Res. Inst. 38, 107-115.
- GASKIN, D. E. (1968): The New Zealand Cetacea. Fish. Res. Bull. 1, 1-92.

- GOODALL, R. P. N. (1978): Report on the small cetaceans stranded on the coast of Tierra del Fuego. Sci. Rep. Whales Res. Inst. 30, 197-230.
- HAAST, J. VON (1876): Further notes on *Oulodon*, a new genus of ziphioid whales from the New Zealand seas. Proc. Zool. Soc. London 1876, 457-458.
- HERSHKOVITZ, P. (1966): Catalog of living whales. Bull. U.S. Nat. Museum 246, 1-259.
- HEYNING, J. E. (1984): Functional morphology involved in intraspecific fighting of the beaked whale *Mesoplodon carlhubbsi*. Can. J. Zool. 62, 1645-1654.
- LEATHERWOOD, S.; REEVES, R. (1983): The Sierra Club Handbook of Whales and Dolphins. San Francisco: Sierra Club Books.
- LICHTER, A. A. (1986): Records of beaked whales (Ziphiidae) from the western south Atlantic. Sci. Rep. Whales Res. Inst. 37, 109-127.
- MANN, G. (1957): Clave de determinación para las especies de mamíferos silvestres de Chile. Invest. Zool. Chilenas 4, 89-126.
- NORRIS, K. S. (1961): Standardized methods for measuring and recording data on smaller cetaceans. J. Mammalogy 42, 471-476.
- PITMAN, R. L.; AGUAYO, A.; URBAN, J. (1987): Observations of an unidentified beaked whale (*Mesoplodon* sp.) in the eastern tropical Pacific. Marine Mammal Science 3, 345-352.
- ROBSON, F. D. (1975): On vestigial and normal teeth in the Scamperdown Beaked Whale, *Mesoplodon grayi*. Tuatara 21, 105-107.
- ROSS, G. J. B. (1984): The smaller cetaceans of the south east coast of southern Africa. Ann. Cape Prov. Mus. (Nat. Hist.) 15, 173-410.
- SIELFELD, W. H. (1979): Consideraciones acerca de tres especies de *Mesoplodon* Gervais (Cetacea: Ziphiidae) presentes en aguas chilenas. Ans. Inst. Pat. Punta Arenas, Chile 10, 179-187.
- (1980): Mamíferos marinos en colecciones y museos de Chile. Ans. Inst. Pat. Punta Arenas, Chile 11, 273-280.

Author's address: JULIO C. REYES, Centro Peruano de Estudios Cetológicos, c/o Grupo Cetáceos-ECCO, Vanderghen 560-2A, Lima 27, Peru